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No. 69—1915.

# British Engineering Standards Association

(*Incorporated 1918.*)

FORMED IN 1901 AS THE ENGINEERING STANDARDS COMMITTEE
BY
THE INSTITUTION OF CIVIL ENGINEERS.
THE INSTITUTION OF MECHANICAL ENGINEERS.
THE INSTITUTION OF NAVAL ARCHITECTS.
THE IRON AND STEEL INSTITUTE.
THE INSTITUTION OF ELECTRICAL ENGINEERS.

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REPORT
ON
BRITISH STANDARD

# TUNGSTEN FILAMENT GLOW LAMPS

## (VACUUM TYPE)

FOR

# AUTOMOBILES.

LONDON:
PUBLISHED FOR THE ASSOCIATION BY CROSBY LOCKWOOD & SON,
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*June, 1919.*

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## PREFACE.

The Sectional Committee on Automobile Parts was appointed by the Main Committee at their meeting on July 18th, 1912, and for the purpose of dealing with the various details in connection with standardisation of the Automobile parts referred to them, ten Sub-Committees were formed upon each of which additional members having special knowledge of the matters to be dealt with were co-opted.

Sub-Committee **M** on Tungsten Filament Glow Lamps for Automobiles, which was responsible for drafting this Report, was formed at a later date, having been appointed at the meeting of the Sectional Committee held on May 4th, 1914.

The question of Standards for Tungsten Filament Glow Lamps for Automobiles was referred to the Engineering Standards Committee by the Society of Motor Manufacturers and Traders, and in drawing up their recommendations the Sub-Committee were able to avail themselves of the Report submitted by the Accessories Section of the Society as the result of the work undertaken by a Sub-Committee appointed by that Section, and they were also assisted by some further proposals which were put forward by a Committee of the Tungsten Filament Lamp Manufacturers' Association.

The lamps dealt with are intended to have an approximate efficiency of one watt per candle and the description "Vacuum" type is used throughout this Report in order to distinguish them from the new "Gas-filled" or "half-watt" lamps which have been recently introduced. It is intended to increase the scope of this Report to cover the latter type of lamp when further progress has been made with their manufacture, and at the same time to deal with the tolerances to be allowed on the lamp cap dimensions.

The question of whether electric glow lamps should be rated by candle power or by watts is engaging the attention of the Sectional Electrical Committee, but as it is desirable to issue the recommendations on Tungsten Filament Glow Lamps for Automobiles with as little delay as possible, the designation "Actual Watts or Nominal Candle Power," used in the present Report, is put forward without prejudice to any decision which may ultimately be come to by the Sectional Electrical Committee.

The Report was adopted by the Sectional Committee on Automobile Parts in December, 1914.

This Report was approved by the Main Committee at their meeting on December 11th, 1914.

# REPORT

ON

# BRITISH STANDARD

# TUNGSTEN FILAMENT GLOW LAMPS

(VACUUM TYPE)

FOR

# AUTOMOBILES.

### General.

1. Tungsten Filament Glow Lamps (Vacuum Type) for Automobiles which purport to be in accordance with the British Standards shall comply with the following recommendations and with the particulars shown on Plates 1 and 2 (Figs. 1–10).

### Types of Lamp.

2. Tungsten Filament Glow Lamps for the following purposes in connection with Automobiles are dealt with in this Report :—

Head Lights.
Side Lights.
Tail Lights.
Dash Lights.
Dome Lights and Festoon Lights (for interior Lighting).

### Voltage.

3. The Standard Voltages for Tungsten Filament Glow Lamps for Automobiles shall be 6 volts and 12 volts.

### Form of Bulbs.

4. For Head Lights and Side Lights the bulbs shall be spherical with pip (Figs. 1–4), while for Tail and Dash Lights and Dome Lights the bulbs shall be pipless (Figs. 5 and 6).

### Form of Filaments.

5. No recommendation is made as to the form of filaments to be employed.

### Position of Filament.

6. For Head Lights (Figs. 1 and 2) the distance from the bulb side of the bayonet pins to the centre of the filament shall be 30 mm.

For Side, Tail and Dash Lights (Figs. 3, 4 and 5) the centre of the filament shall be approximately in the centre of the bulb.

For Dome and Festoon Lights (Figs. 6 and 7) no recommendations are made.

**Lamp Efficiency.**

**7.** It has not been thought possible to recommend a definite Standard in lamp efficiency in view of the fact that improvements in manufacture are constantly taking place, but for the purpose of estimating the normal candle power of the lamps dealt with, the lamp efficiency has been taken as one watt per British candle.

**Lamp Caps.**

**8.** One Standard Small Bayonet Double Contact Lamp Cap (Figs. 8 and 9) shall be adopted for all Head Lights, Side Lights, Tail and Dash Lights, and shall comply with the dimensions given on Plate 2 (Figs. 8 and 9).

In the case of the Dome Lights, which are intended for interior lighting, the cap (see Fig. 6) shall be of the same dimensions as for Head Lights, except that the flange portion next to the bulb is omitted, owing to the restricted total depth from contact to the top of the bulb. This does not interfere with the fit of the lamp into the holder.

The dimensions for the lamp cap for Festoon Lights are given on Plate 2 (Fig. 10).

*Plate 1.*

# BRITISH STANDARD TUNGSTEN FILAMENT GLOW LAMPS (VACUUM TYPE) FOR AUTOMOBILES.

## HEAD LIGHTS.

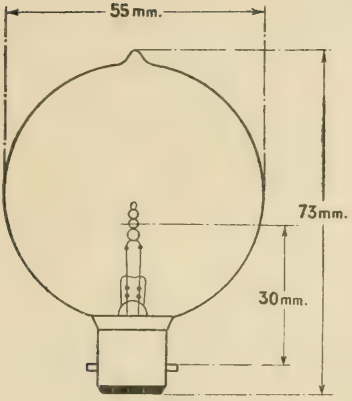


**Fig. 1.**

| Volts. | Amp. | Actual Watts and Nominal Candle Power. |
|---|---|---|
| 6 | 2 | 12 |
| 6 | 3 | 18 |
| 6 | 4 | 24 |
| 12 | 1·5 | 18 |
| 12 | 2 | 24 |

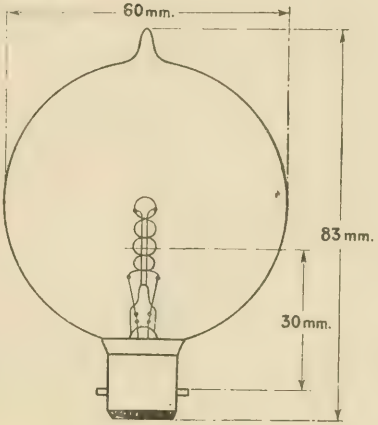


**Fig. 2.**

| Volts. | Amp. | Actual Watts and Nominal Candle Power. |
|---|---|---|
| 12 | 3 | 36 |
| 12 | 4 | 48 |

## SIDE LIGHTS.

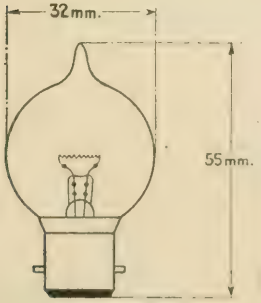


**Fig. 3.**

| Volts. | Amp. | Actual Watts and Nominal Candle Power. |
|---|---|---|
| 6 | 0·5 | 3 |
| 6 | 0·75 | 4·5 |
| 6 | 1·0 | 6 |

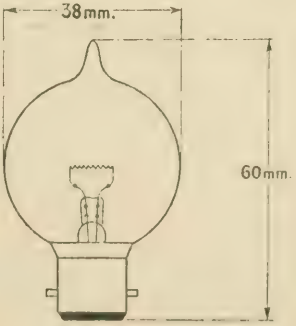


**Fig. 4.**

| Volts. | Amp. | Actual Watts and Nominal Candle Power. |
|---|---|---|
| 12 | 0·5 | 6 |
| 12 | 0·75 | 9 |
| 12 | 1·0 | 12 |

NOTE.—No recommendation is made as to the form of the filaments.

# BRITISH STANDARD TUNGSTEN FILAMENT GLOW LAMPS (VACUUM TYPE) FOR AUTOMOBILES.

## TAIL AND DASH LIGHTS.

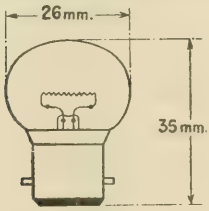


**Fig. 5.**

| Volts. | Amp. | Actual Watts and Nominal Candle Power. |
|---|---|---|
| 6 | 0·5 | 3 |
| 12 | 0·5 | 6 |

## DOME LIGHTS.

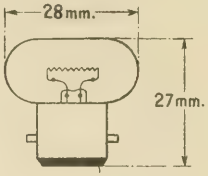


**Fig. 6.**

| Volts. | Amp. | Actual Watts and Nominal Candle Power. |
|---|---|---|
| 6 | 0·75 | 4·5 |
| 12 | 0·75 | 9 |

## FESTOON LIGHTS.

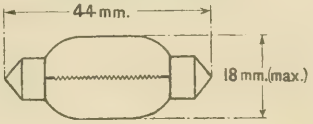


**Fig. 7.**

| Volts. | Amp. | Actual Watts and Nominal Candle Power. |
|---|---|---|
| 6 | 0·75 | 4·5 |
| 6 | 1·0 | 6 |
| 12 | 0·5 | 6 |
| 12 | 0·75 | 9 |

## LAMP CAPS.

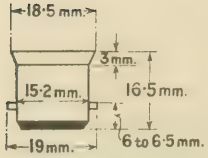


**Fig. 8.**

SMALL BAYONET DOUBLE CONTACT CAP.

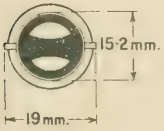


**Fig. 9.**

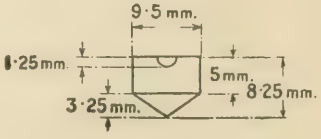


**Fig. 10.**

CAP FOR FESTOON LIGHTS.

NOTE.—No recommendation is made as to the form of the filaments.

# British Engineering Standards Association.

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**JUNE, 1919.**

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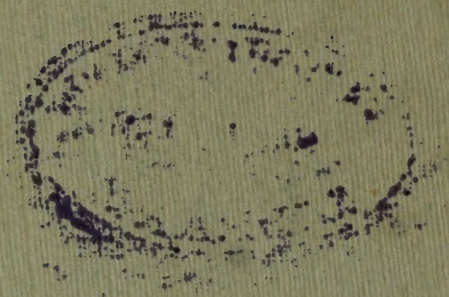
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